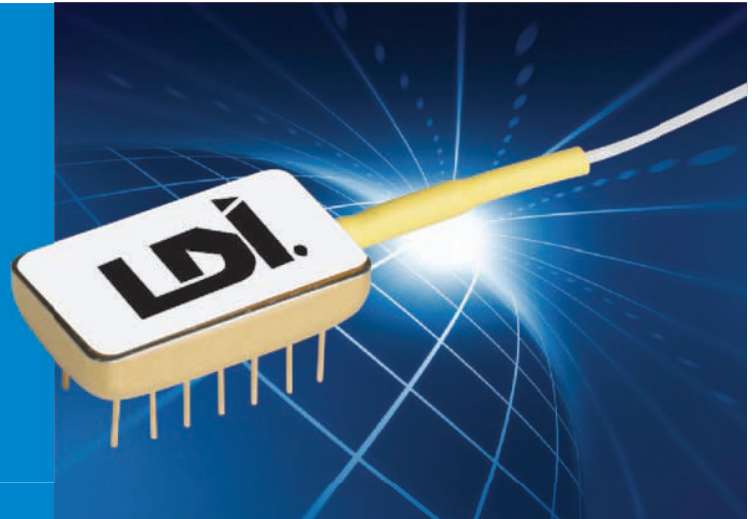


# PINFET Optical Receiver Modules

ISO 9001:2008 Certified

- GR-468-CORE Telcordia Qualified
- High Sensitivity
- High Overload Power
- Wide Dynamic Range
- 850, 1310, 1550nm Operation
- Hermetic Package - Industry Standard 14 Pin DIP Package
- Custom MIL or IEC Screening

Single Supply Option available with LDFR Series



The OSI Laser Diode Inc. PINFET provides an excellent solution for optical receiver systems that require both high sensitivity and wide dynamic range. Applications include telecommunications line-terminating equipment or repeaters and optical sensor systems. The receiver package offers high reliability satisfying Telcordia specifications.

## Specifications and Limits

### Performance @25°C (+/-5.0 VDC)

		Minimum <sup>1</sup> Bandwidth (MHz)	Suggested <sup>2</sup> Data Rate (Mb/s)	Sensitivity <sup>3</sup> (dBm)		Dynamic Range (dB) typ	Trans- impedance (Kohms)
				max	typ		
LDPF Series (non-AGC)	LDPF 0004	4	6	-54	-56	25	1100
	LDPF 0012	12	17	-51	-53	25	740
	LDPF 0024	24	34	-48	-50	25	340
	LDPF 0032	32	45	-47	-49	25	210
	LDPF 0065	65	90	-43	-45	25	80
	LDPF 0120	120	168	-40	-42	25	40
LDPW Series (AGC)	LDPF 0250	250	350	-35	-37	25	10
	LDPW 0003	3	4	-54	-56	53	1100
	LDPW 0012	12	17	-50	-52	49	350
	LDPW 0024	24	34	-48	-50	47	340
	LDPW 0036	36	52	-46	-48	45	210
	LDPW 0065	65	90	-41	-43	40	60
LDSF Series (non-AGC)	LDPW 0110	110	155	-38	-40	37	30
	LDSF 0004	4	6	-51	-53	25	1100
	LDSF 0012	12	17	-48	-50	25	740
	LDSF 0024	24	34	-45	-47	25	340
	LDSF 0032	32	45	-44	-46	25	210
	LDSF 0065	65	90	-40	-42	25	80
LDSF 0120		120	168	-37	-39	25	40
	LDSF 0250	250	350	-32	-34	25	10

		Minimum <sup>1</sup> Bandwidth (MHz)	NEIP pW/SqRt Hz (typ)	Sensitivity <sup>3</sup> (dBm)		Dynamic Range (dB) typ	Trans- impedance (Kohms)
				max	typ		
LDFR Series (non-AGC)	LDFR 0850R	5	0.30	-52	-54	25	940
	LDFR 1550R	5	0.25	-54	-56	25	940

## Common Characteristics @ 25°C

		LDSF Series			LDPF Series			LDPW Series			LDFR Series		
		min	typ	max	min	typ	max	min	typ	max	min	typ	max
Dark Current @ -5V	nA		0.5	1		0.5	1		0.5	1		0.5	1
Maximum Optical Input @ -5V	dBm		Sensitivity Level (dBm) +25dB		Sensitivity Level (dBm) +25dB		-3		0			Sensitivity Level (dBm) +25dB	
Sensitivity Derating Over Temperature	dB		<1		<1				<1			<1	
Detector Responsivity 850nm	A/W		0.65								0.60		
1300nm					0.90				0.90		0.85		0.90
1550nm					0.95				0.95		0.90		0.95
Maximum Output Signal Level	Vpp		2.5		2.5				0.8				3.0
Output Impedance	Ohms		10		10				10				10
Load Impedance	Ohms		1000		1000				1000				1000
Supply Voltage	V	4.5		5.5	4.5		5.5	4.5		5.5	4.75		5.25
Power Supply Current +5V	mA		25	35		25	35		25	35			20
Power Supply Current -5V	mA		10	15		10	15		10	15			
Fiber - MM Tight Buffer	um		50/125/245/900		50/125/245/900				50/125/245/900				50/125/245/900

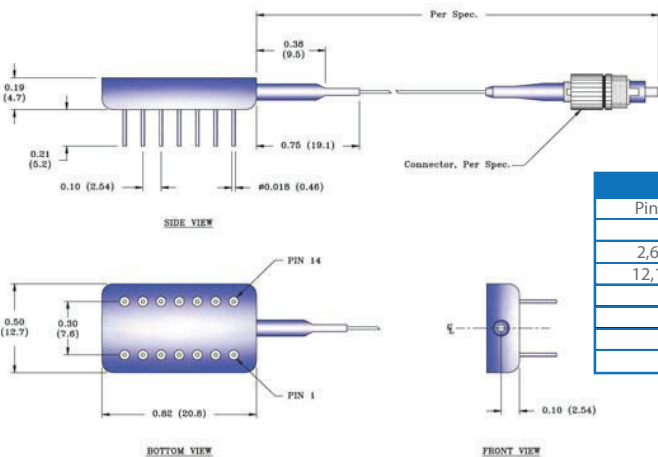
## Absolute Maximum Ratings

	Units	LDPF, LDPW & LDSF Series	LDFR Series
Operating Temperature	°C	-40 to +70	-55 to +85
Storage Temperature	°C	-40 to +85	-55 to +85
Positive Supply Voltage	V	+7	+7
Negative Supply Voltage	V	-7	-
Detector Bias	V	-10	-10
Soldering time at 260°C	secs	10	10

## Notes:

1. Bandwidth is measured at the -3dB point.
2. A given bandwidth will typically support an NRZ data rate of 1.4 times the 3dB bandwidth.
3. Sensitivity is calculated using the noise voltage measured at 25°C at the output of a 3-pole Butterworth filter whose bandwidth equals that of the PINFET's minimum specified bandwidth. Sensitivity is specified as the average optical power in dBm measured at 1300nm and  $T_a=25^\circ\text{C}$  for a BER of  $10^{-9}$ .

## Outline Drawing



PIN ASSIGNMENTS	
Pin	Function
1	-5 V detector bias
2,6,9,11	no connection
12,13,14	no connection
3,5,8	ground
4	-5 volts (LDFR = NC)
7	output
10	+5 volts

## Part Numbering Diagram

**Bandwidth**  
 0004 = 4MHz  
 0005 = 5MHz  
 0012 = 12MHz  
 0024 = 24MHz  
 0032 = 32MHz  
 0065 = 65MHz  
 0120 = 120 MHz  
 0250 = 250MHz

**Series Indicator**  
 LDPF  
 LDPW  
 LDSF  
 LDFR

**Connector Type**

FC = FC / PC  
 LC = LC / PC  
 SC = SC / PC  
 ST = ST®  
 No Characters = No Connector

RoHS Compliant Designator

Dimensions: Inches [mm]  
 Detailed package drawings are available upon request.  
 Standard fiber lengths: 1m min. unconnectorized; 1m +/- 0.1m connectorized

Products can be ordered directly from OSI Laser Diode, Inc. or its representatives.

For a complete listing of representatives, visit our website at

[www.laserdiode.com](http://www.laserdiode.com)

## Personal Hazard and Handling Precautions:

Handle optical fiber with normal care, avoiding stretch, tension, twist, kink or bend abuse. ESD precautions apply.

## Warranty:

Please refer to your product purchase agreement for complete details or check with your OSI Laser Diode sales representative.

## Notice:

OSI Laser Diode, Inc. reserves the right to make changes to the products or information contained herein without notice.  
 No liability is assumed as a result of their use or application.